

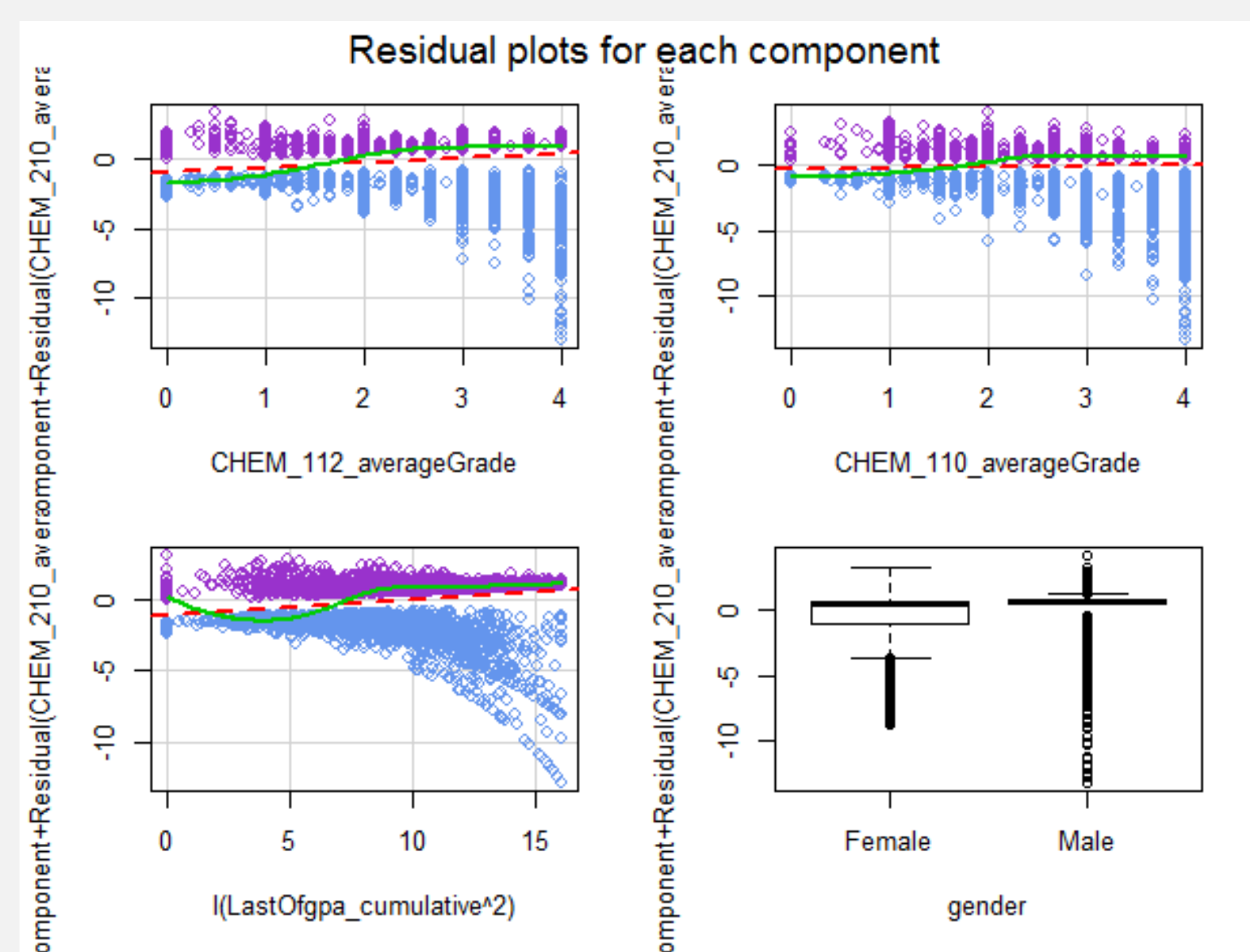
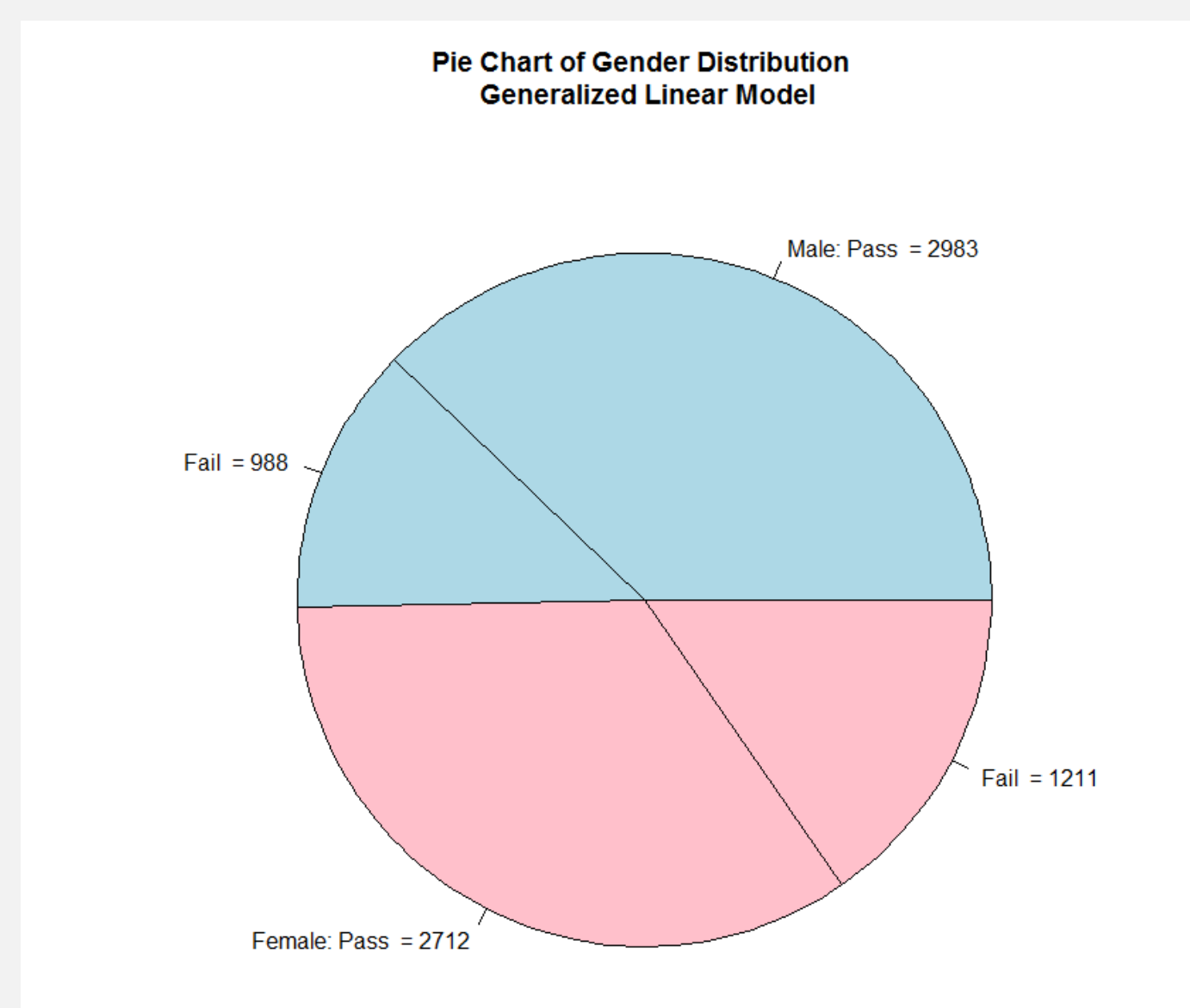
# ORGANIC CHEMISTRY PREDICTING OUTCOMES

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## GENERALIZED LINEAR MODEL

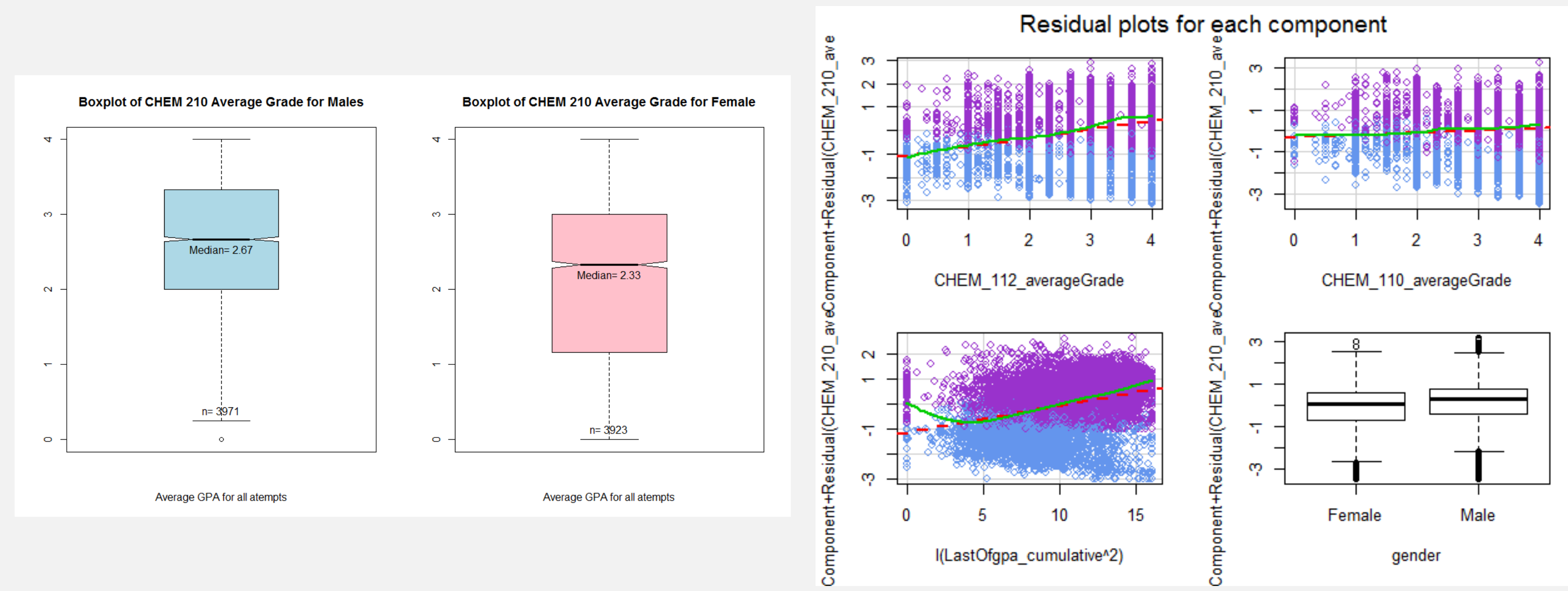
CHEM 210 Binomial outcome	Coefficients	Std. Error	Z-Value	P(Z-Value)
(Intercept)	-1.66	0.0655	-25.33	<2e-16
CHEM 112 average grade	0.343	0.0215	16.00	<2e-16
CHEM 110 average grade	0.068	0.0246	2.78	5.52e-3
Last known cumulative GPA	0.102	0.0062	16.31	<2e-16
Gender, Male	0.236	0.0334	7.07	1.53e-12
AIC:	7730.7			
Hosmer & Lemeshow's R-sqr:	0.173			
Chi-squared :	1619 on 4 DF			
P-Value:	<2.2e-16			



	Odds Ratio	2.50%	97.50%
(Intercept)	0.190	0.167	0.216
CHEM 112 average grade	1.41	1.352	1.47
CHEM 110 average grade	1.07	1.02	1.123
Last known cumulative gpa	1.11	1.094	1.12
Gender, Male	1.267	1.187	1.353

## MULTIPLE LINEAR REGRESSION MODEL

CHEM 210 Average GPA	Coefficients	Std. Error	T-Value	P(T-Value)
(Intercept)	-0.321	0.0449	-7.138	1.03e-12
CHEM 112 average grade	0.377	0.0156	24.140	<2e-16
CHEM 110 average grade	0.106	0.0180	5.906	3.65e-9
Last known cumulative GPA	0.108	0.0045	23.961	<2e-16
Gender, Male	0.233	0.0230	10.124	<2e-16
Multiple R-squared:	0.3492			
Adjusted R-squared:	0.3488			
F-statistic:	1058 on 4 and 7889 DF			
P-Value:	<2.2e-16			



	Coefficients	2.50%	97.50%
(Intercept)	0.190	0.167	0.216
CHEM 112 average grade	1.41	1.352	1.47
CHEM 110 average grade	1.07	1.02	1.123
Last known cumulative gpa	1.11	1.094	1.12
Gender, Male	1.267	1.187	1.353

## PREDICTIONS

Male with D Average	
CHEM 112 average GPA	1.000
CHEM 110 average GPA	1.000
Cumulative GPA	1.000
Gender	Male
Multiple Linear Regression	
0.504 (-1.47 – 2.48)	Grade Point Average
Generalized Linear Regression	
18.1% (15.5% - 20.8%)	Chance of Passing

Male with C Average	
CHEM 112 average GPA	2.000
CHEM 110 average GPA	2.000
Cumulative GPA	2.000
Gender	Male
Multiple Linear Regression	
1.31 (-0.661 – 3.28)	Grade Point Average
Generalized Linear Regression	
42.3% (39.5% - 45.1%)	Chance of Passing

Male with B Average	
CHEM 112 average GPA	3.000
CHEM 110 average GPA	3.000
Cumulative GPA	3.000
Gender	Male
Multiple Linear Regression	
2.33 (0.362 – 4.31)	Grade Point Average
Generalized Linear Regression	
76.6% (75.1% - 78.1%)	Chance of Passing

Female with D Average	
CHEM 112 average GPA	1.000
CHEM 110 average GPA	1.000
Cumulative GPA	1.000
Gender	Female
Multiple Linear Regression	
0.271 (-1.70 – 2.44)	Grade Point Average
Generalized Linear Regression	
12.6% (10.4% - 14.7%)	Chance of Passing

Female with C Average	
CHEM 112 average GPA	2.000
CHEM 110 average GPA	2.000
Cumulative GPA	2.000
Gender	Female
Multiple Linear Regression	
1.08 (-0.89 – 3.05)	Grade Point Average
Generalized Linear Regression	
33.4% (30.6% - 36.1%)	Chance of Passing

Female with B Average	
CHEM 112 average GPA	2.000
CHEM 110 average GPA	2.000
Cumulative GPA	2.000
Gender	Female
Multiple Linear Regression	
2.10 (0.128 – 4.07)	Grade Point Average
Generalized Linear Regression	
68.8% (66.9% - 70.6%)	Chance of Passing